SONY

2-593-277-**15** (1)

LCD Monitor

Operating Instructions

CE

LMD-1410/1420
LMD-2010/2020

© 2005 Sony Corporation

English

Owner's Record

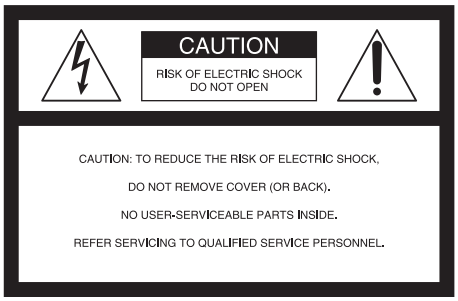
The model and serial numbers are located at the rear. Record these numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____
Serial No. _____

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

In the event of a malfunction or when maintenance is necessary, consult an authorized Sony dealer.

This unit contains substances which can pollute the environment if disposed carelessly.
Please contact our nearest representative office or your local environmental office in case of disposal of this unit.

WARNING
THIS APPARATUS MUST BE EARTHED.

For the customers in Europe

This product with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.
Compliance with these directives implies conformity to the following European standards:

- EN60065: Product Safety
- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment(s):
E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio).

For the Customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Warning on power connection

Use a proper power cord for your local power supply.

	The United States, Canada	**Continental Europe**	**UK, Ireland, Australia, New Zealand**
Plug type	VM0233	COX-07/636	– [1)]
Female end	VM0089	COX-02/VM0310B	VM0303B
Cord type	SVT	H05VV-F	CEE(13)53rd (O, C)
Rated Voltage & Current	10A/125V	10A/250V	10A/250V
Safety approval	UL/CSA	VDE	VDE

1) Use an appropriate rating plug which is applied to local regulations.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the customers in the USA

This product(fluorescent lamp in the liquid crystal display) contains mercury. Disposal of this product may be regulated if sold in the United States. For disposal or recycling information, please contact your local authorities or the Electronics Industries Alliance(www.eiae.org http://www.eiae.org)

Attention-when the product is installed in Rack:

1.Prevention against overloading of branch circuit

When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

2.Providing protective earth

When this product is installed in a rack and is supplied power from an outlet on the rack, please confirm that the outlet is provided with a suitable protective earth connection.

3.Internal air ambient temperature of the rack

When this product is installed in a rack, please make sure that the internal air ambient temperature of the rack is within the specified limit of this product.

4.Prevention against achieving hazardous condition due to uneven mechanical loading

When this product is installed in a rack, please make sure that the rack does not achieve hazardous condition due to uneven mechanical loading.

5.Install the equipment while taking the operating temperature of the equipment into consideration

Please ensure the amount of air flow required for safe operation of this product.
For the operating temperature of the equipment, refer to the specifications of the Operation Manual.

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the stand or bracket specified by the manufacturer, or sold with the apparatus.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Français

AVERTISSEMENT

Afin de réduire les risques d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

Dans le cas d'une défaillance ou de nécessité d'entretien, consulter un revendeur Sony autorisé.

Cet appareil contient des substances susceptibles de causer une pllution de l'environnement si elles sont éliminées de façon non conforme. Consultez votre bureau local de préservation de l'environnement pour savoir comment vous débarrasser de cet appareil.

AVERTISSEMENT
CET APPAREIL DOIT ETRE RELIE A LA TERRE.

Deutsch

WARNUNG

Um die Gefahr von Bränden oder elektrischen Schlägen zu verringern, darf dieses Gerät nicht Regen oder Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

Sollten am Gerät Probleme auftreten oder eine Wartung erforderlich werden, wenden Sie sich an einen autorisierten Sony -Händler.

Dieses Gerät enthält Substanzen, die bei unsachgemäßer Entsorgung die Umwelt belasten. Bitten wenden Sie sich an unsere nächste Niederlassung oder an Ihr Umweltschutzamt, wenn Sie das Gerät entsorgen wollen.

WARNUNG
DIESES GERÄT MUSS GEERDET WERDEN.

Avertissement concernant le raccordement au secteur

Utilisez un cordon d'alimentation adapté à la tension secteur.

	Etats-Unis, Canada	Europe continentale	Royaume-Uni, Irlande, Australie, Nouvelle-Zélande
Type de fiche	VM0233	COX-07/636	– 1)
Extrémité femelle	VM0089	COX-02/VM0310B	VM0303B
Type de cordon	SVT	H05VV-F	CEE(13)53rd (O, C)
Intensité et tension nominales	10A/125V	10A/250V	10A/250V
Certification de sécurité	UL/CSA	VDE	VDE

1) Utilisez une fiche présentant les valeurs nominales appropriées et conforme à la réglementation locale en vigueur.

Warnhinweis zum Netzanschluss

Verwenden Sie ein für die Stromversorgung in Ihrem Land geeignetes Netzkabel.

	USA, Kanada	Kontinental-Europa	Großbritannien, Irland, Australien, Neuseeland
Steckertyp	VM0233	COX-07/636	– 1)
Buchse	VM0089	COX-02/VM0310B	VM0303B
Kabeltyp	SVT	H05VV-F	CEE(13)53rd (O, C)
Nennspannung & Stromstärke	10A/125V	10A/250V	10A/250V
Sicherheitszertifizierung	UL/CSA	VDE	VDE

1) Verwenden Sie einen geeigneten Netzstecker, der die örtlichen Bestimmungen erfüllt.

Español

ADVERTENCIA

Para reducir el riesgo de electrocución, no exponga este aparato a la lluvia ni a la humedad.

Para evitar descargas eléctricas, no abra el aparato. Solicite asistencia técnica únicamente a personal especializado.

En caso de mal funcionamiento o cuando sea necesario el servicio de mantenimiento, consulte a su proveedor Sony.

Esta unidad contiene sustancias que pueden contaminar el medio ambiente si no se desecha adecuadamente. Póngase en contacto con nuestro departamento de representatión más próximo o con el departamento local de medio ambiente cuando vaya a desechar esta unidad.

ADVERTENCIA
ESTE APARATO DEBE CONECTARSE A TIERRA.

Italiano

ATTENZIONE

Per ridurre il rischio di incendi o scosse elettriche, non esporre questo apparato alla pioggia o all'umidità.

Per evitare scosse elettriche, non aprire l'involucro. Per l'assistenza rivolgersi unicamente a personale qualificato.

Nel caso di malfunzionamenti o di necessarie riparazioni dell'apparecchio, consultare un rivenditore autorizzato Sony.

Questo apparecchio contiene sostanze che possono inquinare l'amibiente se non vengono smaltite con le dovute cautele. Per informazioni sulle normative in caso di smaltimento di questo apparecchio, si prega di contattare il nostro rappresentatnte locale o il centro di informazioni ambientali di zona.

AVVERTENZA
QUESTO APPARECCHIO DEVE ESSERE COLLEGATO A MASSA.

Advertencia sobre la conexión de alimentación

Utilice un cable de alimentación adecuado al suministro eléctrico loca.

	Estados Unidos y Canadá	Europa continental	Reino Unido, Irlanda, Australia y Nueva Zelanda
Tipo de enchufe	VM0233	COX-07/636	– 1)
Extremo hembra	VM0089	COX-02/VM0310B	VM0303B
Tipo de cable	SVT	H05VV-F	CEE(13)53rd (O, C)
Corriente y tensión nominal	10A/125V	10A/250V	10A/250V
Aprobación de seguridad	UL/CSA	VDE	VDE

1) Utilice un enchufe de valor nominal adecuado que cumpla con la normativa local.

Avvertenza sul collegamento dell'alimentazione

Utilizzare un cavo di alimentazione adeguato all'alimentazione del Paese in cui ci si trova.

	Stati Uniti, Canada	Europa continentale	Regno Unito, Irlanda, Australia, Nuova Zelanda Giappone
Tipo di spina	VM0233	COX-07/636	– 1)
Terminale femmina	VM0089	COX-02/VM0310B	VM0303B
Tipo di cavo	SVT	H05VV-F	CEE(13)53rd (O, C)
Tensione e corrente nominale	10A/125V	10A/250V	10A/250V
Approvazione di sicurezza	UL/CSA	VDE	VDE

1) Utilizzare una presa con voltaggio adeguato conforme alle normative locali.

Pour les clients européens

Ce produit portant la marque CE est conforme à la fois à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) et à la Directive sur les basses tensions (73/23/CEE) émises par la Commission de la Communauté européenne.
La conformité à ces directives implique la conformité aux normes européennes suivantes:

- EN60065: Sécurité des produits
- EN55103-1: Interférences électromagnétiques (émission)
- EN55103-2: Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants:
E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé ex. studio de télévision).

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung Und erfüllt die EMV-Richtlinie (89/336/EWG) sowie die Niederspannungsrichtlinie (73/23/EWG) der EG-Kommission.
Angewandte Normen:

- EN60065: Sicherheitsbestimmungen
- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Dieses Produkt ist für den Einsatz unter folgenden elektromagnetischen Bedingungen ausgelegt:
E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtbereich im Freien) und E4 (kontrollierter EMV-Bereich, z. B. Fernsehstudio).

Para los usuarios en Europa

Este producto con la marca CE cumple con las Directivas EMC (89/336/CEE) y de Baja Tensión (73/23/CEE) emitidas por la Comisión de la Comunidad Europea.
El cumplimiento de estas directivas implica la conformidad con los siguientes estándares europeos:

- EN60065: Seguridad del producto
- EN55103-1: Interferencias electromagnéticas (Emisión)
- EN55103-2: Susceptibilidad electromagnética (Inmunidad)

Este producto está diseñado para utilizarse en los siguientes entornos electromagnéticos:
E1 (residencial), E2 (comercial e industria ligera), E3 (exteriores urbanos) y E4 (entorno de EMC controlada, ej. estudio de TV).

Per i clienti in Europa

Questo prodotto recante il marchio CE è conforme sia alla direttiva sulla compatibilità elettromagnetica (EMC) (89/336/CEE) che alla direttiva sulle basse tensioni (73/23/CEE) emesse dalla Commissione della Comunità Europea.
La conformità a queste direttive implica la conformità alle seguenti normative europee:

- EN60065: Sicurezza dei prodotti
- EN55103-1: Interferenza elettromagnetica (Emissione)
- EN55103-2: Sensibilità ai disturbi elettromagnetici (Immunità)

Il presente prodotto è stato progettato per l'impiego in uno o più dei seguenti ambienti elettromagnetici:
E1 (residenziale), E2 (commerciale e di industria leggera), E3 (esterni urbani) e E4 (ambiente controllato EMC, ad esempio uno studio televisivo).

中 文

警告

为减少火灾或电击危险，请勿让本设备受到雨淋或受潮。

为避免电击，请勿拆卸机壳。维修事宜应仅由合格维修人员进行。

在发生故障或需要维修时，请与经授权的 Sony 经销商联络。

本机带有有害物质，废弃时若处理不当会污染环境。废弃本机时，请就近与本公司办事处或贵地环境管理部门联系。

警告
此设备必须完好接地。

声　明

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

关于电源连接的警告
请使用符合贵地电源的电源线

中 文

警告

若要避免起火或電擊危險，請勿將本機器曝露在雨中或潮濕環境中。

為避免觸電，切勿擅自打開機殼檢修，必須找合格人員為您服務。

電源連接警告

使用符合當地電源的電源線。

警告

本裝置必須接地。

한국어

경고

화재나 감전 위험을 방지하려면 장치가물기나 습기에 노출되지 않도록 하십시오.

감전 위험이 있으므로 본체를 열지 마십시오. 자격 있는 전문 정비 요원만 서비스를 실시해야 합니다.

경고

이 장치는 접지되어야만 합니다.

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

전원 연결에 대한 경고

현지 공급 전원에 맞는 규격 전원 코드를 사용하십시오.

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Precaution

On Safety

- Operate the unit only with a power source as specified in the “Specifications” section.
- A nameplate indicating operating voltage, power consumption, etc., is located on the rear panel.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the unit with a damaged power cord.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.

On Installation

- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

Handling the LCD Screen

- Bright or dark points of lights (red, blue or green) may appear on the LCD screen. This is not a malfunction. The LCD screen is made with high-precision technology with more than 99.99 % of the picture elements intact. However, some picture elements may not appear intermittently.
- Do not leave the LCD screen facing the sun as it can damage the LCD screen. Take care when you place the unit by a window.
- Do not push or scratch the LCD monitor’s screen. Do not place a heavy object on the LCD monitor’s screen. This may cause the screen to lose uniformity.
- If the unit is used in a cold place, horizontal lines or a residual image may appear on the screen. This is not a malfunction. When the monitor becomes warm, the screen returns to normal.
- If a still picture is displayed for a long time, a residual image may appear. The residual image will eventually disappear.
- The screen and the cabinet become warm during operation. This is not a malfunction.

About the Fluorescent Tube

A specially designed fluorescent tube is installed as the lighting apparatus for this unit. If the LCD screen becomes dark, unstable or does not turn on, consult your Sony dealer.

On Cleaning

Before cleaning

Be sure to disconnect the AC power cord from the AC outlet.

On cleaning the monitor screen

The monitor screen surface is especially treated to reduce reflection of light.
As incorrect maintenance may impair the performance of the monitor, take care with respect to the following:

- Wipe the screen gently with a soft cloth such as a cleaning cloth or glass cleaning cloth.
- Stubborn stains may be removed with a soft cloth such as a cleaning cloth or glass cleaning cloth lightly dampened with water.
- Never use solvent such as alcohol, benzene or thinner, or acid, alkaline or abrasive detergent, or chemical cleaning cloth, as they will damage the screen surface.

On cleaning the cabinet

- Clean the cabinet gently with a soft dry cloth. Stubborn stains may be removed with a cloth lightly dampened with mild detergent solution, followed by wiping with a soft dry cloth.
- Use of alcohol, benzene, thinner or insecticide may damage the finish of the cabinet or remove the indications on the cabinet. Do not use these chemicals.
- If you rub on the cabinet with a stained cloth, the cabinet may be scratched.
- If the cabinet is in contact with a rubber or vinyl resin product for a long period of time, the finish of the cabinet may deteriorate or the coating may come off.

On Repacking

Do not throw away the carton and packing materials. They make an ideal container which to transport the unit.

On Mounting on a Rack

Leave 1U space empty above and below the monitor to ensure adequate air circulation or install a fan to maintain the monitor's performance.

If you have any questions about this unit, contact your authorized Sony dealer.

On Fan Error

The fan for cooling the unit is built in. When the "FAN ERROR" message is displayed, turn off the power and contact an authorized Sony dealer.

About this manual

The instructions in this manual are for the following four models:

- LMD-1410
- LMD-1420
- LMD-2010
- LMD-2020

The illustration of LMD-1420 is used for the explanations.

Any differences in specifications are clearly indicated in the text.

Features

The LMD-1410 and the LMD-1420 are a 14-type, the LMD-2010 and the LMD-2020 are a 20-type LCD monitor.

High brightness LCD panel

Because of the monitor's high brightness, high contrast, high speed response, and wide viewing angle technology, it can be used under various lighting conditions.

Rack mount monitors

The LMD-1410/1420 can be installed in a standard 19-inch rack using an optional rack mounting bracket MB-526 and the LMD-2010/2020 can be installed using MB-527. This is essential when space is paramount in crowded OB vehicles.

Monitor stand with tilt function

As the stand with tilt function is euipped for the monitor, you can use it easily on the desk top. When you mount the monitor to the rack, remove the stand.

Lightweight, thin design

The lightweight, thin design reduces the load for an OB vehicle and the space needed for installation.

3-color tally lamp (LMD-1420/2020)

The tally lamp lights in red, green or amber to monitor each input picture and check the on-air mode.

Two color system available

The monitor can display NTSC and PAL signals by connecting this unit. The appropriate color system is selected automatically.

Blue only mode (LMD-1420/2020)

In the blue only mode, an apparent monochrome display is obtained with all three of the R/G/B cathodes driven with a blue signal. This facilitates color saturation and phase adjustments and observation of VCR noise.

Analog RGB/component input connectors

Analog RGB or component signals from video equipment can be input through these connectors.

Y/C input connectors

The video signal, split into the luminance signal (Y) and the chrominance signal (C), can be input through this connector.

SDI optional input (LMD-1420/2020)

SDI signals can be available when input adaptor BKM-320D (optional) is attached.

External sync input (LMD-1420/2020)
When the EXT SYNC button is in the on position, the unit can be operated on the sync signal supplied from an external sync generator.

Automatic termination (connector with ⎍ mark only)
The input connector is terminated internally at 75 ohms when nothing has been connected to the output connector. If a cable is connected to the output connector, the internal terminal is automatically released and the signals input to the input connector are output to the output connector (loop-through).

Select color temperature and gamma mode
You can select the color temperature from among two (high and low) settings and gamma mode from among five settings. You can also adjust the color temperature to the appropriate setting.

Aspect setting
You can set the monitor to 4:3 or 16:9 display mode according to the input video signal.

Various markers (LMD-1420/2020)
Displays frame boundaries such as the center marker, safe area marker, etc. and supports the various film aspect ratios.

Scan setting
You can set the display size to -3% under scan or 5% over scan mode.

On-screen menus
You can set the appropriate settings according to the connected system by using the on-screen menus.

Key inhibit function
You can inhibit a key, function to prevent misoperation.

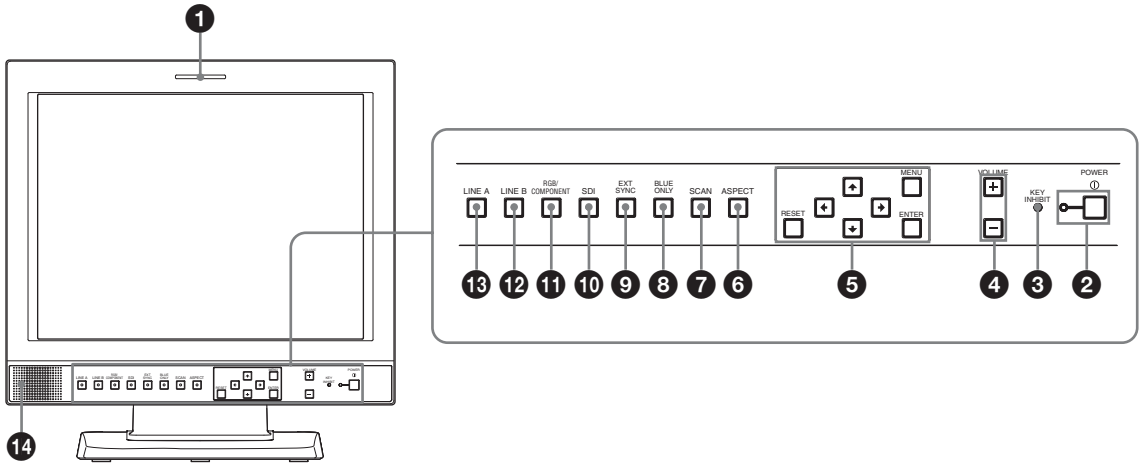
Select language display
You can select from seven display languages English, French, German, Spanish, Italian, Japanese and Chinese.

External remote control function
You can directly select the input signal, aspect, etc., by operating the equipment connected to the PARALLEL REMOTE terminal.

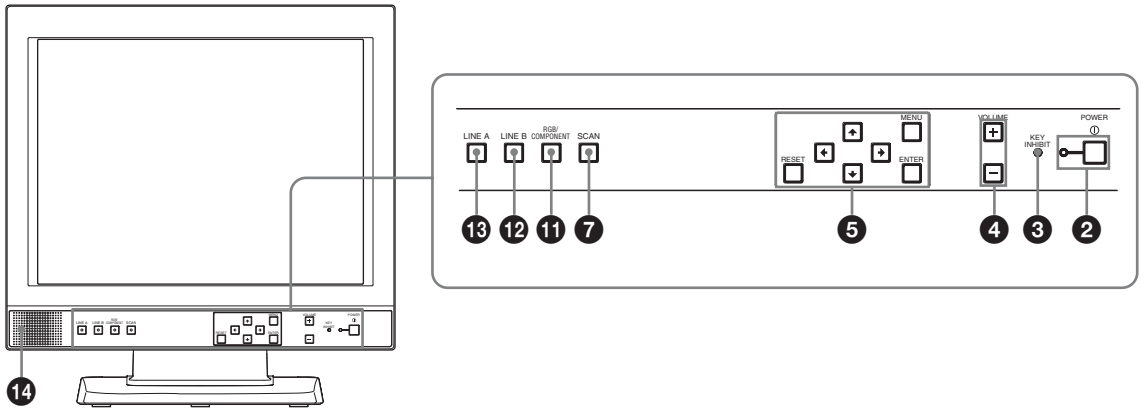
Location and Function of Parts and Controls

Front Panel

LMD-1420/2020



LMD-1410/2010



❶ Tally lamp (LMD-1420/2020)
You can check the status of the monitor by the color of the tally lamp.
The tally lamp lights in red, green or amber according to the input signals.

❷ POWER switch and indicator
Press to turn on the power. The indicator turns on. Press again to turn off the power.

❸ KEY INHIBIT indicator
When the key inhibit function works, the indicator lights.
For the key inhibit function, refer to "KEY INHIBIT menu" on page 25.

❹ VOLUME buttons
Press the + button to increase the volume or the – button to decrease it.

❺ Menu operation buttons
Displays or sets the on-screen menu.

↑/↓/←/→ (arrow) buttons
Select the menu or make various adjustments.

MENU button
Press to display the on-screen menu.
Press again to clear the menu.

RESET button
Resets the value of an item back to the previous value. This button functions when the menu item is adjusted (displayed) on the screen.

ENTER button
Press to confirm a selected item on the menu.

❻ ASPECT select button
Sets the aspect ratio of the picture, 4:3 or 16:9.

❼ SCAN select button
You can change the scan size of the picture. When you press the button, the scan size is changed to normal (5% over scan), under (-3% under scan) or ZOOM (LMD-1420/2020 only) set on the menu (see page 25).

❽ BLUE ONLY button
Press this button to eliminate the red and green signals. Only blue signal is displayed as an apparent monochrome picture on the screen. This facilitates "chroma" and "phase" adjustments and observation of VCR noise.

❾ EXT SYNC (external sync) button
Press to operate the unit on an external sync signal through the EXT SYNC IN connector.
The EXT SYNC button works when the component/ RGB signals are input.

❿ SDI button
Press to monitor the signal from the OPTION IN connector.

⓫ RGB/COMPONENT button
Press to monitor the signal through the RGB/ COMPONENT input connectors.

⓬ LINE B button
Press to monitor the signal through the LINE B input connectors.

⓭ LINE A button
Press to monitor the signal through the LINE A input connectors.

⓮ Speakers
The audio signal which is selected by the input select button on the front panel is output.

Input Signals and Adjustable/ Setting Items

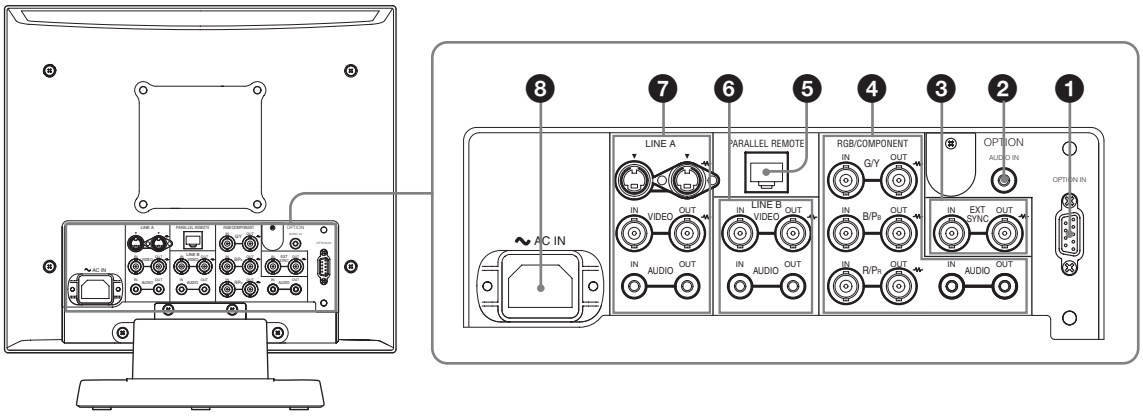
Item	Input signal				
	Video, Y/C	B & W	Component	RGB	SDI (LMD-1420/2020)
					D1
CONTRAST	○	○	○	○	○
BRIGHT	○	○	○	○	○
CHROMA	○	×	○	×	○
PHASE	○ (NTSC)	×	×	×	×
APERTURE	○	○	○	×	○
COLOR TEMP	○	○	○	○	○
COMP LEVEL*	×	×	○	×	×
NTSC SETUP	○ (NTSC)	○ (480/60I)	×	×	×
GAMMA	○	○	○	○	○
SCAN	○	○	○	○	○
ASPECT	○	○	○	○	○
MARKER (LMD-1420/2020)	○	○	○	○	○
BLUE ONLY (LMD-1420/2020)	○	×	○	○	○

* When a component signal (480/60I) is input, this can be switchable.

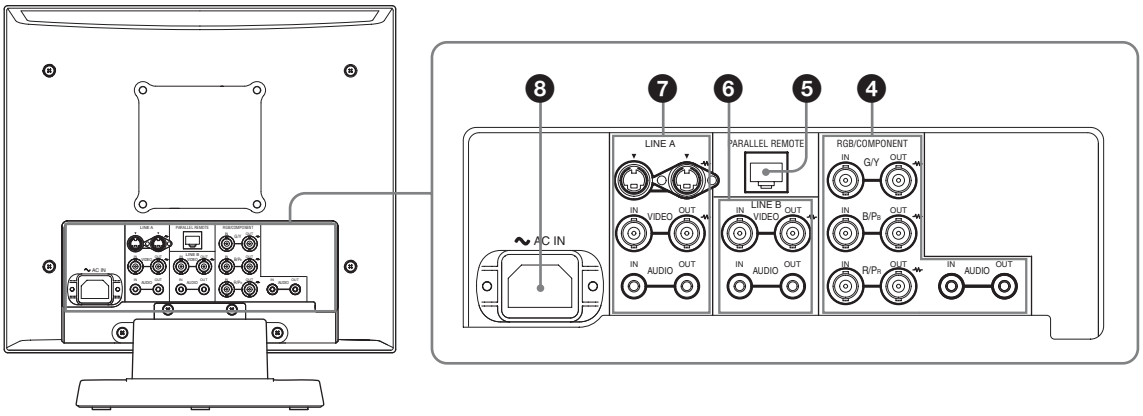
○ : Adjustable/can be set
× : Not adjustable/cannot be set

Rear Panel

LMD-1420/2020



LMD-1410/2010



❶ OPTION IN connector (D-sub 9-pin, female) (LMD-1420/2020)

When optional Sony input adaptor BKM-320D is connected, SDI signals are input.
Press the SDI button to select the signal.

Note

Do not install the equipment other than BKM-320D. It causes to damage the unit or the equipment.

❷ OPTION AUDIO IN connector (LMD-1420/2020)

If the BKM-320D is installed in the OPTION IN connector, input an audio signal into this connector.
Press the SDI button to monitor the audio signal.

❸ EXT SYNC IN/OUT (external sync) connectors (BNC) (LMD-1420/2020)

Press the EXT SYNC button to use the sync signal through this connector.

IN connector

When this unit operates on an external sync signal, connect the reference signal from a sync generator to this connector.

Note

When inputting a video signal with the jitters, etc. the picture may be disturbed. We recommend using the TBC (time base corrector).

OUT connector

Loop-through output of the IN connector. Connect to the external sync input of video equipment to be synchronized with this unit.
When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the IN connector is output from this connector.

❹ RGB/COMPONENT connectors

Analog RGB signal or component (Y, P_B, P_R) signal input connectors and their loop-through output connectors.

Press the RGB/COMPONENT button on the front panel to monitor the signal input through these connectors.

G/Y, B/P_B, R/P_R IN/OUT (BNC)

These are the input/output connectors for an analog RGB and a component (Y, P_B, P_R) signal. Unless an external sync signal is input, the monitor is synchronized with the sync signal contained in the G/Y signal.

AUDIO IN/OUT (RCA pin)

When using an analog RGB or a component signal as a video signal, use these jacks for the input/output of an audio signal. Connect them to the audio input/output jacks on equipment such as a VCR.

❺ PARALLEL REMOTE terminal (modular connector)

Forms a parallel switch and controls the monitor externally.

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to this modular connector.

For details on the pin assignment and factory setting function assigned to each pin, see page 28.

❻ LINE B connectors

Line input connectors for composite video and audio signals and their loop-through output connectors.

Press the LINE B button on the front panel to monitor the signal input through these connectors.

VIDEO IN/OUT (BNC)

These are the input/output connectors for a composite video signal. Connect them to the composite video input/output connectors on equipment such as a VCR, video camera, or another monitor.

AUDIO IN/OUT (RCA pin)

These are the input/output jacks for an audio signal. Connect them to the audio input/output jacks on equipment such as a VCR.

❼ LINE A connectors

Line input connectors for Y/C separate, composite video and audio signals and their loop-through output connectors.

Press the LINE A button on the front panel to monitor the input signal through these connectors.

If you input signals to both Y/C IN and VIDEO IN, the signal input to the Y/C IN is selected.

Y/C IN/OUT (4-pin mini-DIN)

These are the input/output connectors for a Y/C separate signal. Connect them to the Y/C separate input/output connectors on equipment such as a VCR, video camera, or another monitor.

VIDEO IN/OUT (BNC)

These are the input/output connectors for a composite video signal. Connect them to the composite video input/output connectors on equipment such as a VCR, video camera, or another monitor.

AUDIO IN/OUT (RCA pin)

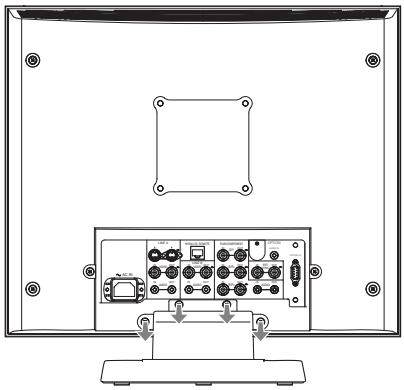
These are the input/output jacks for an audio signal. Connect them to the audio input/output jacks on equipment such as a VCR.

❽ AC IN socket

Connect the supplied AC power cord.

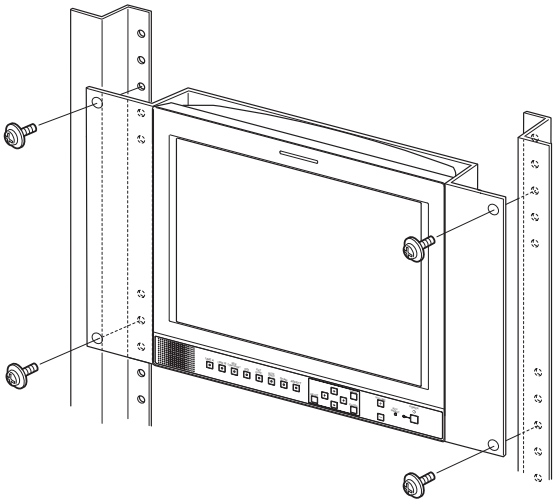
Installing to the Rack

1 Remove the screws (4) to remove the stand.

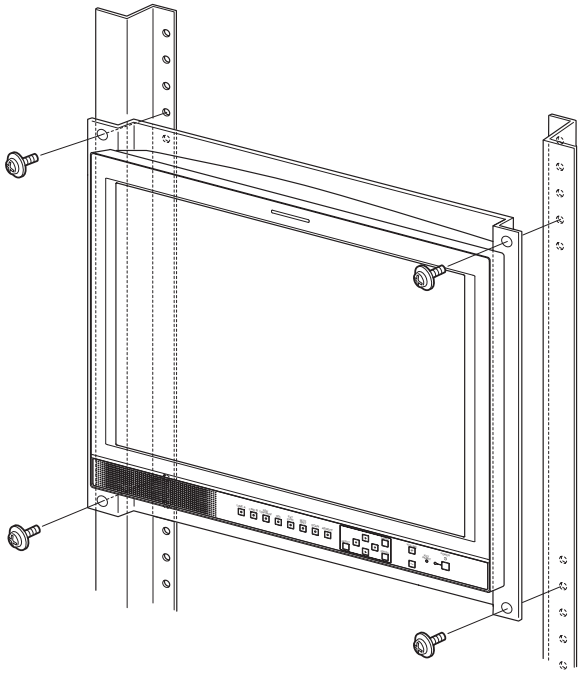


2 Attach the unit to the rack after attaching the mounting bracket.

LMD-1410/1420



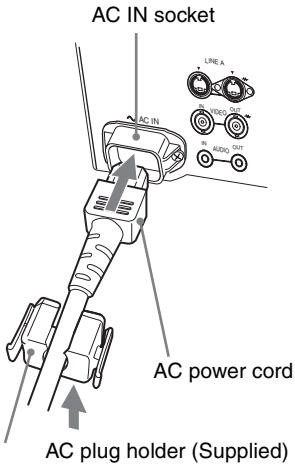
LMD-2010/2020



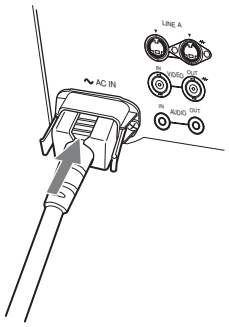
Connecting the AC Power Cord

Connect the supplied AC power cord as illustrated.

1 Plug the AC power cord into the AC IN socket on the rear panel. Then, attach the AC plug holder (supplied) to the AC power cord.



2 Slide the AC plug holder over the cord until it locks.



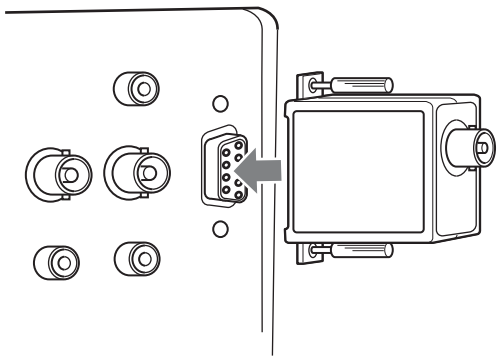
To remove the AC power cord

Pull out the AC plug holder while pressing the lock levers.

Attaching the Input Adaptor

LMD-1420/2020

Before attaching the input adaptor, disconnect the power cord.



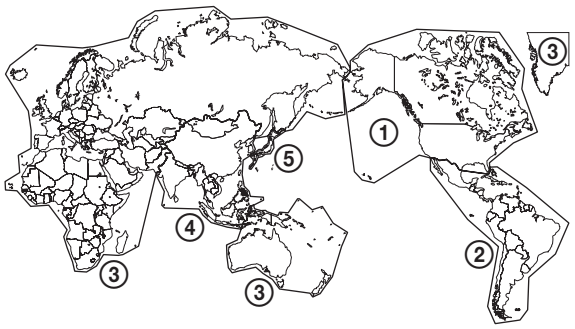
Note

Do not install the equipment other than BKM-320D. It causes to damage the unit or the equipment.

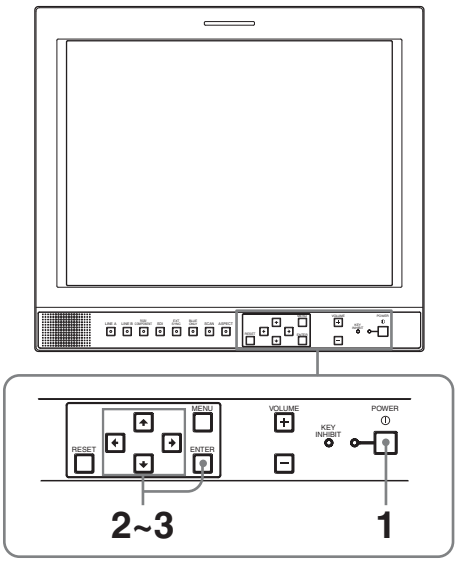
Selecting the Default Settings

When you turn on the unit for the first time after purchasing it, select the area where you intend to use this unit from among the options.

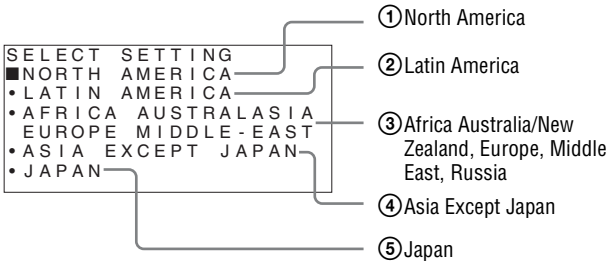
The default setting values for each area



		COLOR TEMP	COMP LEVEL	NTSC SETUP
①NORTH AMERICA		Low	BETA7.5	7.5
②LATIN AMERICA PAL&PAL-N AREA	ARGENTINA	Low	SMPTE	0
	PARAGUAY	Low	SMPTE	0
	URUGUAY	Low	SMPTE	0
NTSC&PAL-M AREA	OTHER AREA	Low	BETA7.5	7.5
③AFRICA AUSTRALASIA EUROPE MIDDLE-EAST		Low	SMPTE	0
④ASIA EXCEPT JAPAN	NTSC AREA	Low	BETA7.5	7.5
	PAL AREA	Low	SMPTE	0
⑤JAPAN		High	SMPTE	0

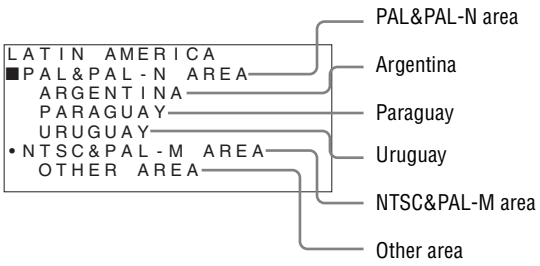


1 Press the POWER switch.
The power is turned on and the SELECT SETTING screen appears.

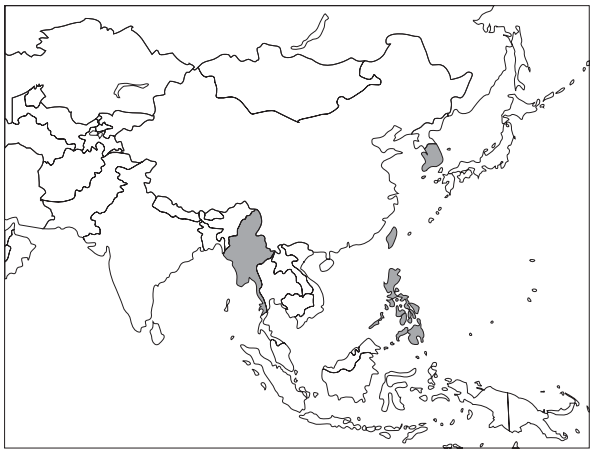


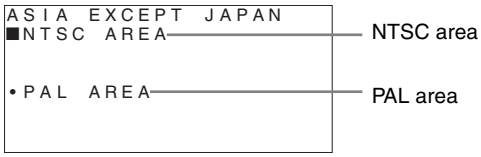
2 Press the ↑ or ↓ button to select the area where you intend to use the unit and press the → or ENTER button.
If you select either LATIN AMERICA or ASIA EXCEPT JAPAN, one of the following screens appears.

② If LATIN AMERICA is selected:



④ If ASIA EXCEPT JAPAN is selected:
Customers who will use this unit in the shaded areas shown in the map below should select NTSC AREA.
Other customers should select PAL AREA.





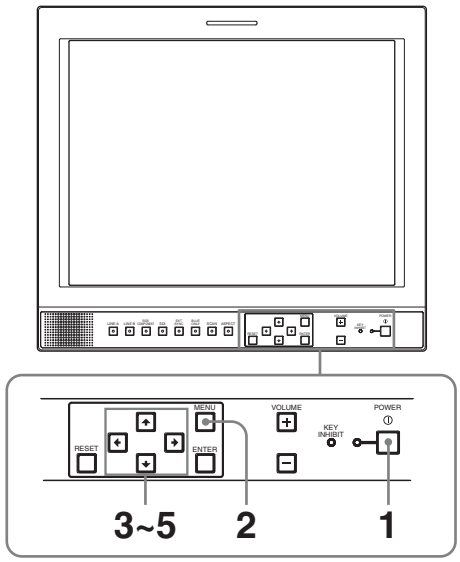
3 Press the ↑ or ↓ button to narrow the area further and then press the → or ENTER button.
The SELECT SETTING screen disappears and the menu item settings suitable for the selected area are applied.

Note

When you have selected the wrong area, set the following items using the menu.
COLOR TEMP (on page 23)
COMP LEVEL(on page 24)
NTSC SETUP (on page 24)
See “The default setting values for each area” (on page 19) on the setting value.

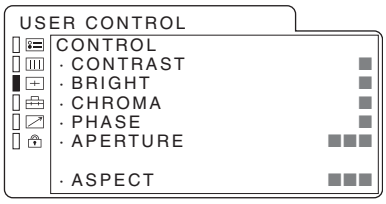
Selecting the Menu Language

You can select one of seven languages (English, French, German, Spanish, Italian, Japanese, Chinese) for displaying the menu and other on-screen displays. The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.



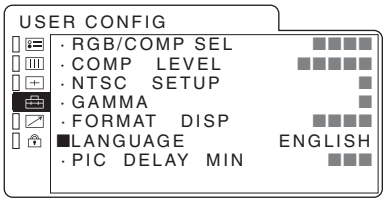
1 Press the POWER switch to turn on the unit.

2 Press the MENU button.
The menu appears.
The menu presently selected is shown as a yellow button.

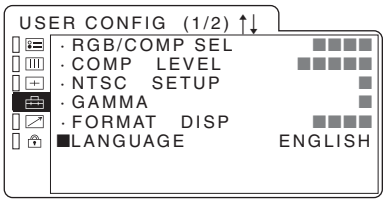


3 Press the ↑ or ↓ button to select the following menu, then press the → or ENTER button.
LMD-1410/2010: USER CONFIG (User Configuration) menu
LMD-1420/2020: USER CONFIG 1/2 (User Configuration 1/2) menu
The setting items (icons) in the selected menu are displayed in yellow.

LMD-1410/2010



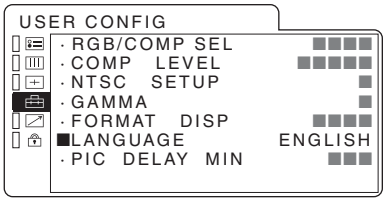
LMD-1420/2020



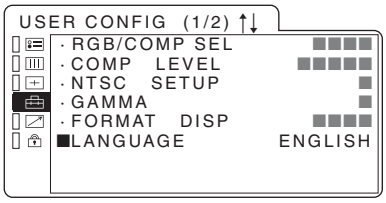
4 Press the ↑ or ↓ button to select "LANGUAGE," then press the → or ENTER button.
The selected item is displayed in yellow.

5 Press the ↑ or ↓ button to select a language, then press the ENTER button.
The menu changes to the selected language.

LMD-1410/2010



LMD-1420/2020



To clear the menu

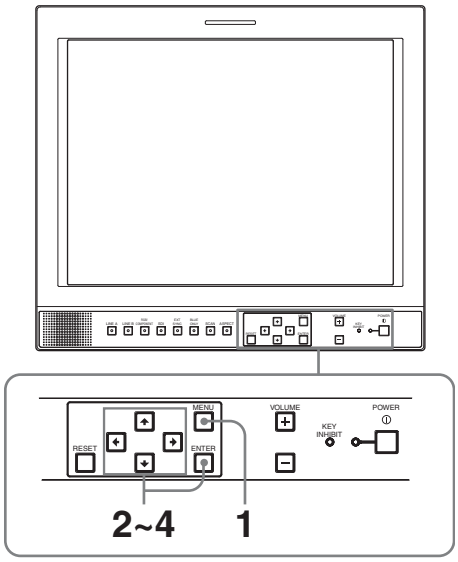
Press the MENU button.
The menu disappears automatically if a button is not pressed for one minute.

Using the Menu

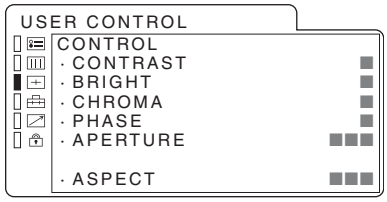
The unit is equipped with an on-screen menu for making various adjustments and settings such as picture control, input setting, set setting change, etc. You can also change the menu language displayed in the on-screen menu.

To change the menu language, see "Selecting the Menu Language" on page 20.

The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.

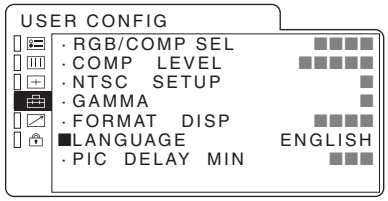


1 Press the MENU button.
The menu appears.
The menu presently selected is shown as a yellow button.

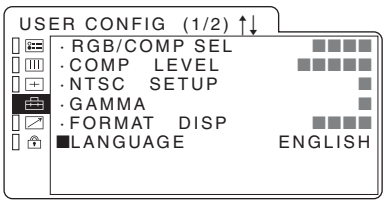


2 Use the ↑ or ↓ button to select a menu, then press the → or ENTER button.
The menu icon presently selected is shown in yellow and setting items are displayed.

LMD-1410/2010



LMD-1420/2020



3 Select an item.
Use the ↑ or ↓ button to select the item, then press the → or ENTER button.
The item to be changed is displayed in yellow.

Note

If the menu consists of multiple pages, press ↑ or ↓ to go to the desired menu page.

4 Make the setting or adjustment on an item.
When changing the adjustment level:
To increase the number, press the ↑ button.
To decrease the number, press the ↓ button.
Press the ENTER button to confirm the number, then restore the original screen.

When changing the setting:
Press the ↑ or ↓ button to change the setting.
Press the ENTER button to confirm the setting.

Notes

- An item displayed in blue cannot be accessed. You can access the item if it is displayed in white.
- If the key inhibit has been turned on, all items are displayed in blue. To change any of the items, turn the key inhibit to OFF first.

For details on the key inhibit, see page 25.

To clear the menu

Press the MENU button.
The menu disappears automatically if a button is not pressed for one minute.

About the memory of the settings

The settings are automatically stored in the monitor memory.

To reset items that have been adjusted

Pressing the RESET button while you are adjusting any of the menu items resets the menu item to the previous setting.

Adjustment Using the Menus

Items

The screen menu of this monitor consists of the following items.

STATUS (the items indicate the current settings.)

FORMAT
COLOR TEMP
GAMMA
COMP LEVEL
NTSC SETUP
RGB/COMP SEL
SCAN MODE
DISPLAY
OPTION

COLOR TEMP/BAL

COLOR TEMP
MANUAL ADJ

USER CONTROL

CONTROL

USER CONFIG

RGB/COMP SEL
COMP LEVEL
NTSC SETUP
GAMMA
FORMAT DISP
LANGUAGE
MARKER (LMD-1420/2020 only)
CENTER MARKER (LMD-1420/2020 only)
SAFETY AREA (LMD-1420/2020 only)
MARKER LEVEL (LMD-1420/2020 only)
MARKER MAT (LMD-1420/2020 only)
SCAN (LMD-1420/2020 only)
PIC DELAY MIN

REMOTE PARALLEL

1 PIN
2 PIN
3 PIN
4 PIN
6 PIN
7 PIN
8 PIN

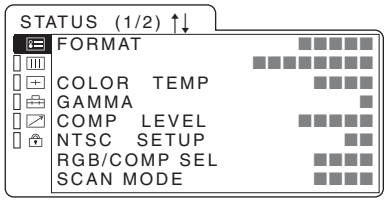
KEY INHIBIT

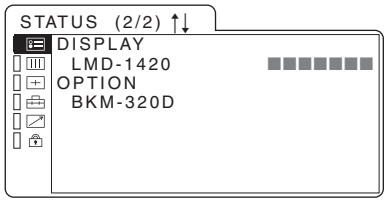
KEY INHIBIT

Adjusting and Changing the Settings

STATUS menu

The STATUS menu is used to display the current status of the unit. The following items are displayed:

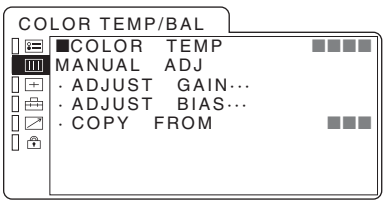




- Signal format
- Color temperature
- Gamma
- Component level
- NTSC setup
- RGB/COMP SEL
- Scan mode
- Display
- Option

COLOR TEMP/BAL menu

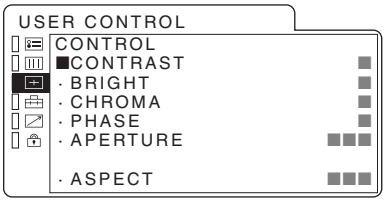
The COLOR TEMP/BAL menu is used for adjusting the picture white balance.
You need to use the measurement instrument to adjust the white balance.
Recommended: Konicaminolta color analyzer CA-210



Submenu	Setting
COLOR TEMP	Select the color temperature from among HIGH, LOW and USER setting.
MANUAL ADJ	If you set the COLOR TEMP to USER setting, the item displayed is changed from blue to white, which means you can adjust the color temperature. • **ADJUST GAIN...**: Adjusts the color balance (GAIN). • **ADJUST BIAS...**: Adjusts the color balance (BIAS). • **COPY FROM**: If you select HIGH or LOW, the white balance data for the selected color temperature will be copied in the user setting.

USER CONTROL menu

The USER CONTROL menu is used for adjusting the picture.
Items that cannot be adjusted depending on the input signal are displayed in blue.

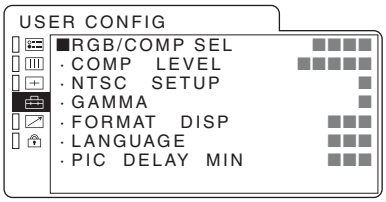


Submenu	Setting
CONTROL	You can adjust the picture. • **CONTRAST**: Adjusts the picture contrast. • **BRIGHT**: Adjusts the picture brightness. • **CHROMA**: Adjusts color intensity. The higher the setting, the greater the intensity. The lower the setting, the lower the intensity. • **PHASE**: Adjusts color tones. The higher the setting, the more greenish the picture. The lower the setting, the more purplish the picture. • **APERTURE:** Adjusts the picture sharpness. The higher the setting, the sharper the picture. For details of input signals and adjustable/setting items, see page 14.
ASPECT (LMD-1410/2010 only)	Sets the aspect ratio of the picture to 4:3 or 16:9.

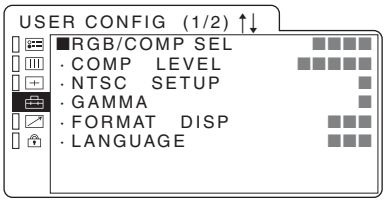
USER CONFIG menu

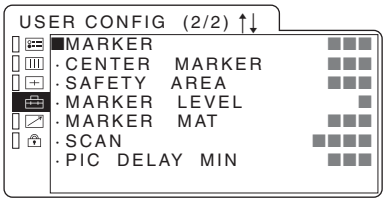
You can select a language, etc.
Items that cannot be adjusted depending on the input signal are displayed in blue.

LMD-1410/2010



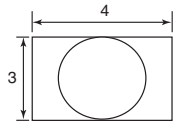
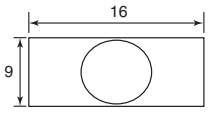
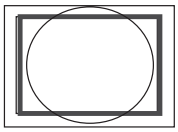
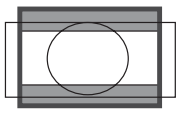
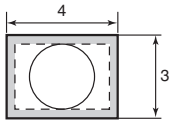
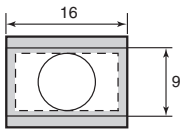
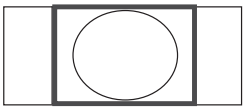
LMD-1420/2020





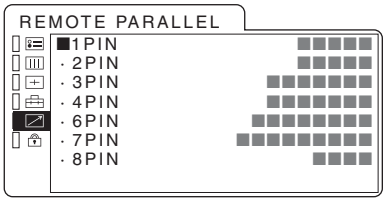
Submenu	Setting
RGB/COMP SEL	When a signal input via the RGB/COMPONENT connector is being monitored, based on the signal being input, select RGB or COMP.
COMP LEVEL	Select the component level from among three modes. • **SMPTE** for 100/0/100/0 signal • **BETA 0** for 100/0/75/0 signal • **BETA 7.5** for 100/7.5/75/7.5 signal
NTSC SETUP	Select the NTSC setup level from two modes. The 7.5 setup level is used mainly in North America. The 0 setup level is used mainly in Japan.
GAMMA	Selects the appropriate gamma mode. You can select from among 5 settings. When "3" is selected, the setting is roughly same as the gamma mode of the CRT (2.2).
FORMAT DISP	Select the display mode of the signal format. • **ON**: The format is always displayed. • **OFF**: The display is hidden. • **AUTO**: The format is displayed for about 10 seconds when the input of the signal begins.
LANGUAGE	You can select the menu or message language from among seven languages. • **ENGLISH:** English • **DEUTSCH:** German • **FRANÇAIS:** French • **ITALIANO:** Italian • **ESPAÑOL:** Spanish • **日本語 :** Japanese • **中文 :** Chinese
MARKER	When the frame of the film is displayed on the screen, select the aspect ratio according to the film. • **When 16:9 aspect ratio is selected with the ASPECT button** You can select from among 4:3, 15:9, 14:9, 13:9 and OFF. • **When 4:3 aspect ratio is selected with the ASPECT button** You can select from among 16:9 and OFF.
CENTER MARKER	Select ON to display the center mark of the picture and OFF not to display.
SAFETY AREA	Select the safe area size for the aspect ratio determined by the ASPECT button. You can select from among OFF, 80%, 85%, 88%, 90% and 93%.
MARKER LEVEL	Sets the luminance to display the MARKER and SAFETY AREA. When the setting is low, the marker is displayed dark.
MARKER MAT	Selects whether you put mat on the outside of the marker display. • **OFF**: No mat is put. • **HALF**: Gray mat is put. • **BLACK**: Black mat is put.

Submenu	Setting
SCAN	Sets the scan size of the picture. Select from “OFF” and “ZOOM” mode.
PIC DELAY MIN	Selects to set the delay by the picture processing to the minimum level when the signal is input. • **OFF**: Mode for giving precedence to the picture quality (recommended mode). It takes longer than “ON” for processing the picture. • **ON**: The processing time is short. As the line flicker is displayed in this mode, it is available for checking the line flicker of the telop work and so on.

		Input	
			
Output	NORMAL SCAN (5 % OVERSCAN)		
	UNDER SCAN		
	ZOOM	–	

REMOTE PARALLEL menu

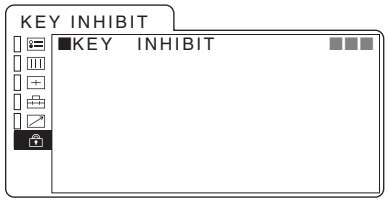
Select the PARALLEL REMOTE connector pins for which you want to change the function.
You can assign various functions to 1 to 4 pins and 6 to 8 pins. The following lists the functions you can assign to the pins.



- – – – (“– – –”: No function is assigned.)
- LINE A
- LINE B
- RGB/COMP
- 16:9
- 4:3
- UNDER
- NORMAL
- ZOOM (LMD-1420/2020 only)
- TALLY R (LMD-1420/2020 only)
- TALLY G (LMD-1420/2020 only)
- EXT SYNC (LMD-1420/2020 only)
- BLUE ONLY (LMD-1420/2020 only)
- 16:9 MARKER (LMD-1420/2020 only)
- 15:9 MARKER (LMD-1420/2020 only)
- 14:9 MARKER (LMD-1420/2020 only)
- 13:9 MARKER (LMD-1420/2020 only)
- 4:3 MARKER (LMD-1420/2020 only)
- CENTER MARKER (LMD-1420/2020 only)
- SAFETY AREA 80% (LMD-1420/2020 only)
- SAFETY AREA 85% (LMD-1420/2020 only)
- SAFETY AREA 88% (LMD-1420/2020 only)
- SAFETY AREA 90% (LMD-1420/2020 only)
- SAFETY AREA 93% (LMD-1420/2020 only)
- SDI (LMD-1420/2020 only)

If you use the PARALLEL REMOTE function, you need to connect cables. For more details, see page 28.

KEY INHIBIT menu



You can lock the setting so that they cannot be changed by an unauthorized user.
Select OFF or ON.
If you set ON, all items are displayed in blue, indicating the items are locked.

Troubleshooting

This section may help you isolate the cause of a problem and as a result, eliminate the need to contact technical support.

- **The display is colored in green or purple** → Select the correct input by pressing RGB/COMPONENT button.
- **The unit cannot be operated** → The key protection function works. Set the KEY INHIBIT setting to OFF in the KEY INHIBITmenu.

Specifications

Picture performance

LCD panel	a-Si TFT Active Matrix
Picture size	LMD-1410/1420: 14 type 283 × 212 × 354 mm (W/H/Diagonal) ($11^1/_4 \times 8^3/_8 \times 14$ inches)
	LMD-2010/2020: 20 type 408 × 306 × 510 mm (W/H/Diagonal) ($16^1/_8 \times 12^1/_8 \times 20^1/_8$ inches)
Resolution	640 × 480 dots (VGA)
Viewing angle	85°/85°/85°/85° (typical)
Scan	Under –3 % Normal 5 %
Aspect	4:3
Display color	LMD-1410/1420: 16,200,000
	LMD-2010/2020: 16,700,000

Input/output connectors

Input

LINE A input connectors

Y/C input	4-pin mini-DIN (1)
VIDEO input	BNC type (1), 1 Vp-p ±3 dB, negative synchronization
AUDIO input	RCA pin (1), –5 dBu 47 kilohms or higher

LINE B input connectors

VIDEO input	BNC type (1), 1 Vp-p ±3 dB, negative synchronization
AUDIO input	RCA pin (1), –5 dBu 47 kilohms or higher

RGB/COMPONENT input connectors BNC type (3)

RGB input	0.7 Vp-p ±3 dB, (Sync On Green, 0.3 Vp-p negative sync.)
Component input	0.7 Vp-p ±3 dB, (75 % chrominance standard color bar signal)
AUDIO input	RCA pin (1), –5 dBu 47 kilohms or higher

OPTION AUDIO input jacks (LMD-1420/2020)
RCA pin (2), –5 dBu 47 kilohms or higher
External synchronized input (LMD-1420/2020)
BNC type (1), 0.3 to 4 Vp-p negative polarity binary
PARALLEL REMOTE input terminal
Parallel remote
Modular connector 8-pin (1)

Output

LINE A output connectors
Y/C output: 4-pin mini-DIN (1), Loop-through, with 75 ohms automatic terminal function
VIDEO output
BNC type (1), Loop-through, with 75 ohms automatic terminal function
AUDIO output
RCA pin (1), Loop-through
LINE B output connectors
VIDEO output
BNC type (1), Loop-through, with 75 ohms automatic terminal function
AUDIO output
RCA pin (1), Loop-through
RGB/COMPONENT output connectors
RGB/Component output
BNC type (3), Loop-through, with 75 ohms automatic terminal function
AUDIO output
RCA pin (1), Loop-through
EXT SYNC output connector (LMD-1420/2020)
BNC type (1), Loop-through, with 75 ohms automatic terminal function
Built-in speaker output
0.5 W (mono)

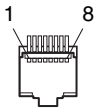
General

Power: AC100 – 240 V, 50/60 Hz
Power consumption
LMD-1410: Maximum: approx. 48 W 1.2 A – 0.6 A
LMD-1420: Maximum: approx. 51 W 1.2 A – 0.6 A
LMD-2010: Maximum: approx. 84 W 1.2 A – 0.6 A
LMD-2020: Maximum: approx. 87 W 1.2 A – 0.6 A
Peak inrush current
(1) Power ON, current probe method: 90 A (LMD-1410/1420), 64 A (LMD-2010/2020)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 12 A (LMD-1410/1420/2010/2020)
Dimensions: LMD-1410/1420: Approx. 343 × 354 × 264 mm (not including the projection parts) ($13^5/_8 \times 14 \times 10^1/_2$ inches) (w/h/d)
LMD-2010/2020: Approx. 470× 441 × 264 mm (not including the projection parts) ($18^5/_8 \times 17^3/_8 \times 10^1/_2$ inches) (w/h/d)
Mass: LMD-1410: Approx. 6.5 kg (14 lb 5 oz)
LMD-1420: Approx. 6.8 kg (14 lb 16 oz)
LMD-2010: Approx. 8.7 kg (19 lb 3 oz)
LMD-2020: Approx. 9.2 kg (20 lb 5 oz)
Operating conditions
Temperature: 0 °C to 35 °C (32 °F to 95 °F)
Recommended temperature: 20 °C to 30 °C (68 °F to 86 °F)
Humidity: 30% to 85% (no condensation)
Pressure: 700 hPa to 1060 hPa
Storage and transport conditions
Temperature: –10 °C to 40 °C (14 °F to 104 °F)
Humidity: 0% to 90%
Pressure: 700 hPa to 1060 hPa
Accessories supplied
AC power cord (1)
AC plug holder (1)
Operating Instructions (1)
CD-ROM (1)
Warranty Card (1)
Using the CD-ROM Manual (1)
Optional accessories
Rack mount bracket for 14 type monitor MB-526
Rack mount bracket for 20 type monitor MB-527
SDI input adaptor BKM-320D

Design and specifications are subject to change without notice.

Pin assignment

PARALLEL REMOTE terminal
Modular connector
(8-pin)



Pin number	Functions
1	Designating LINE A input signal
2	Designating LINE B input signal
3	Designate RGB/COMPONENT input signal
4	16:9
5	GND
6	4:3
7	Selecting under
8	Selecting normal

You can allocate functions using the REMOTE PARALLEL menu (see page 25).

Wiring required to use the Remote Control

Connect the function you want to use with a Remote Control to the Ground (Pin 5).

Video signal formats

The unit is applicable to the following signal formats.

Input						
System	Total lines	Active lines	Frame rate	Scanning format	Aspect ratio	Signal standard
575/50I (PAL)	625	575	25	2:1 interlace	16:9/4:3	EBU N10 (PAL: ITU-R BT.624)
480/60I (NTSC)	525	483	30	2:1 interlace	16:9/4:3	SMPTE 253M (NTSC: SMPTE 170M)

Output			
System	Effective picture size	Frame rate	Scanning format
575/50I (PAL)	640 × 480	50	Progressive
480/60I (NTSC)	640 × 480	60	Progressive

When an optional input adaptor is installed, the unit is applicable to the following signal formats.

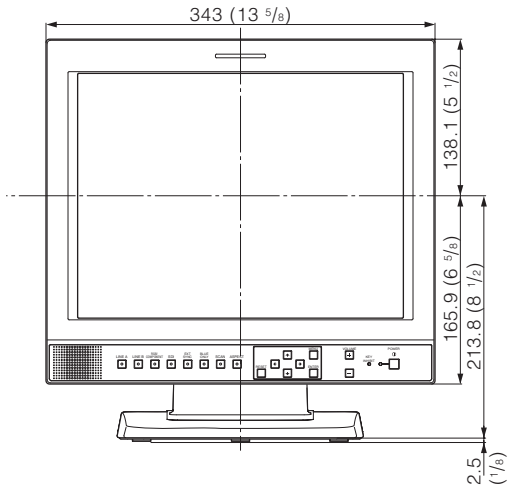
When BKM-320D is installed

Input		
System	Signal standard	BKM-320D
575/50I	ITU-R BT.656	○
480/60I	SMPTE 259M	○

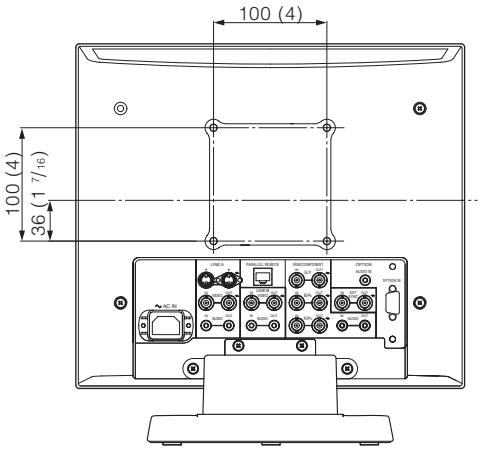
Dimensions

LMD-1410/1420

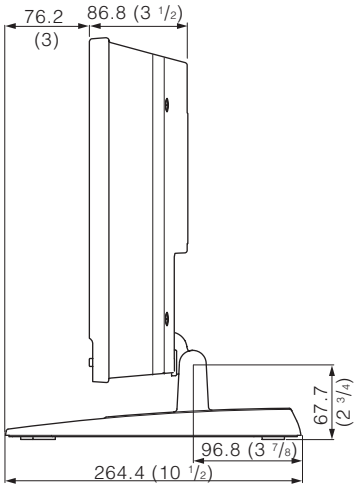
Front



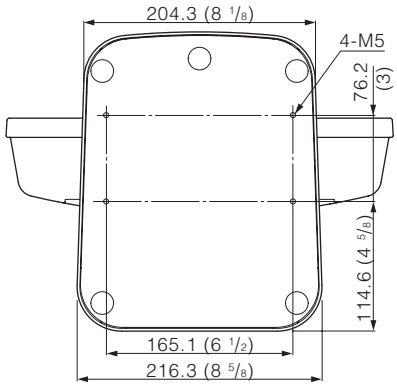
Rear



Side



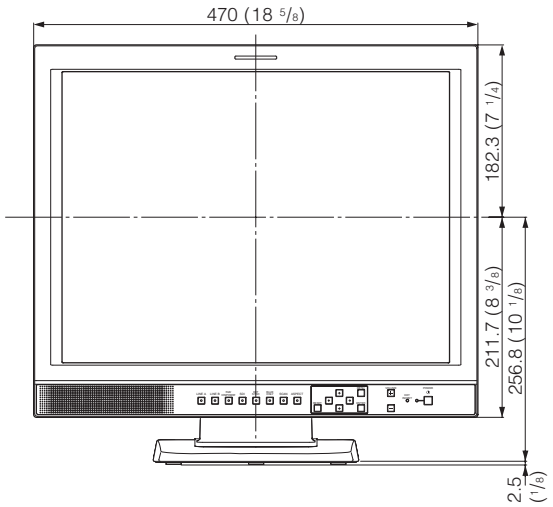
Bottom



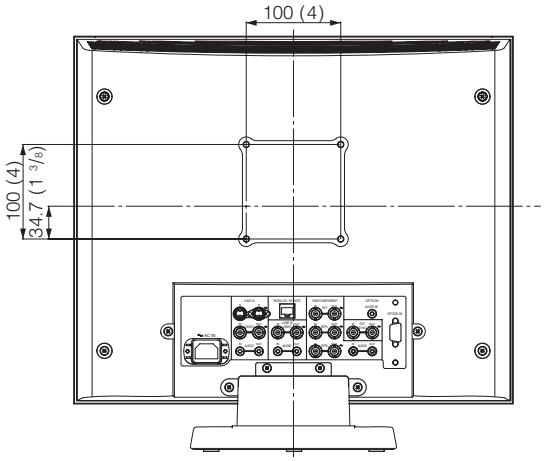
Unit: mm (inches)

LMD-2010/2020

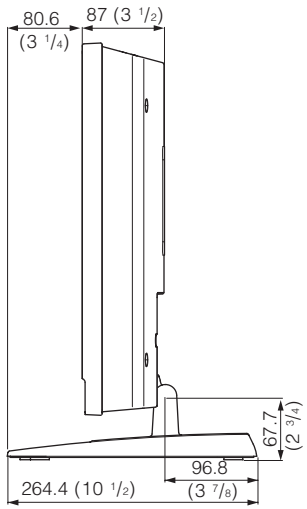
Front



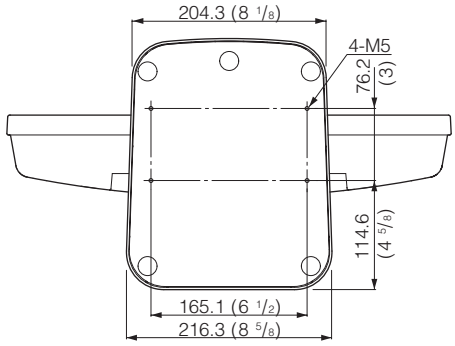
Rear



Side



Bottom



Unit: mm (inches)